08078201 261E3S0

FIG.1

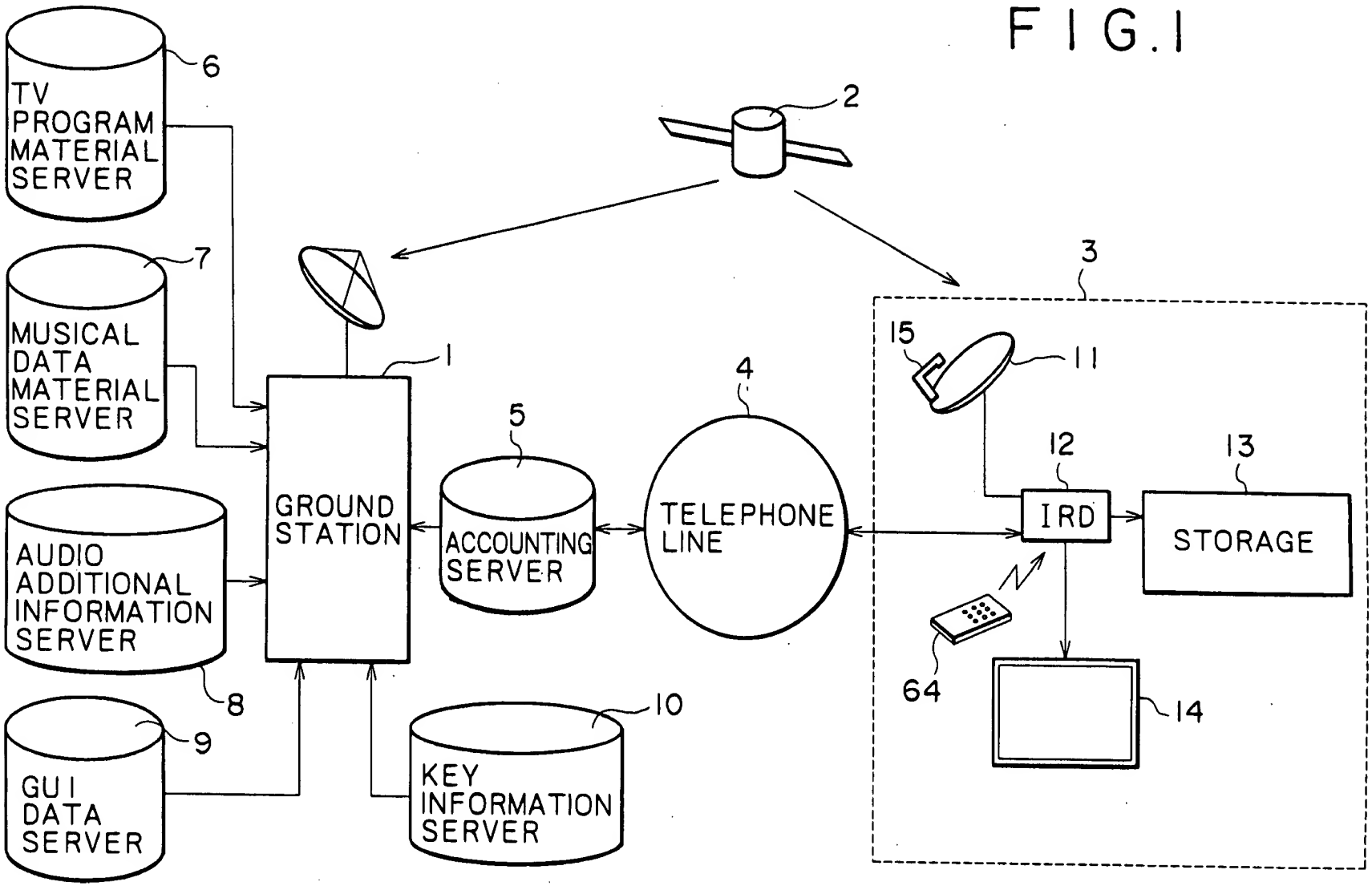


FIG. 2

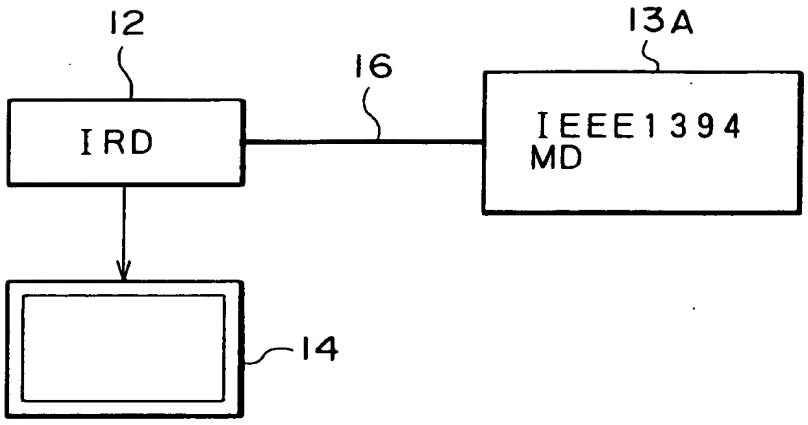


FIG. 3

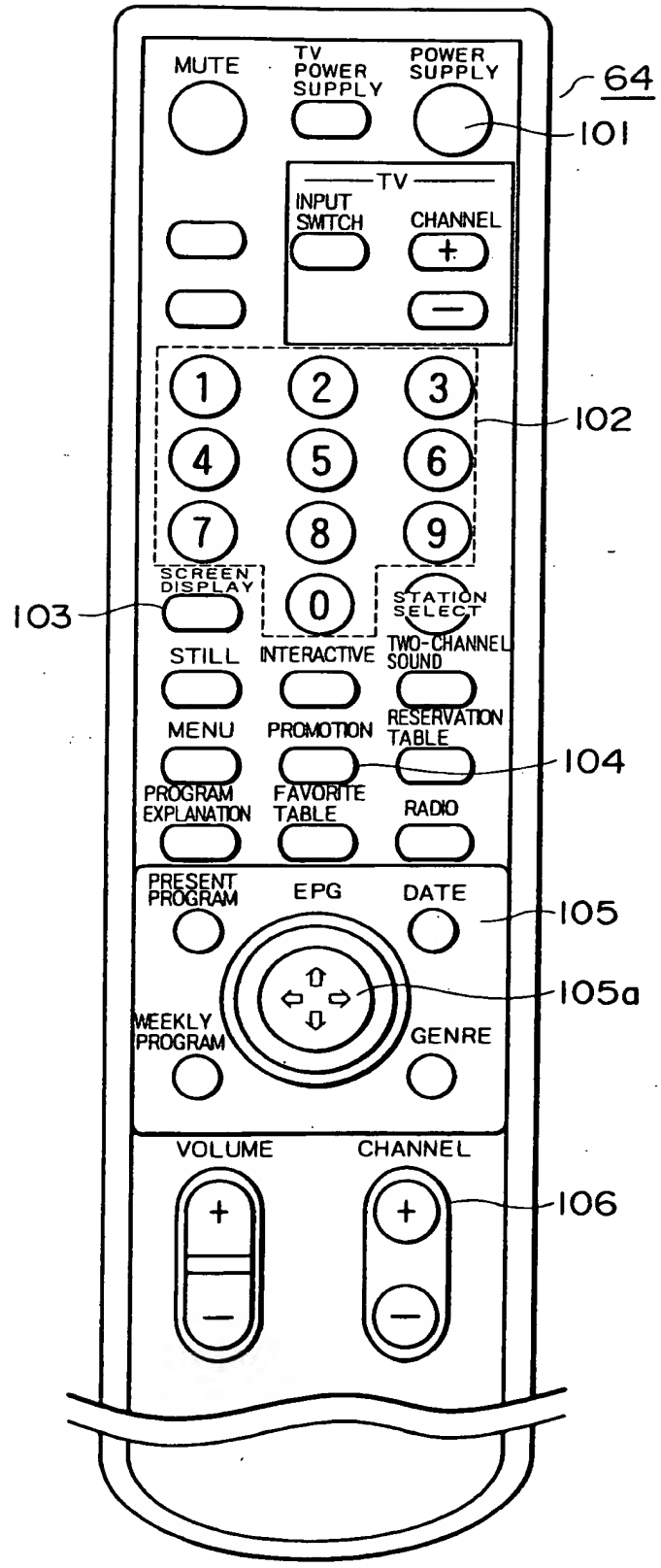

MUTE
TV POWER SUPPLY
POWER SUPPLY
64
101
TV
INPUT SWITCH
CHANNEL
+
−
1
2
3
4
5
6
7
8
9
102
SCREEN DISPLAY
0
STATION SELECT
103
STILL
INTERACTIVE
TWO-CHANNEL SOUND
MENU
PROMOTION
RESERVATION TABLE
104
PROGRAM EXPLANATION
FAVORITE TABLE
RADIO
PRESENT PROGRAM
EPG
DATE
105
105a
WEEKLY PROGRAM
GENRE
VOLUME
CHANNEL
106

FIG.4A

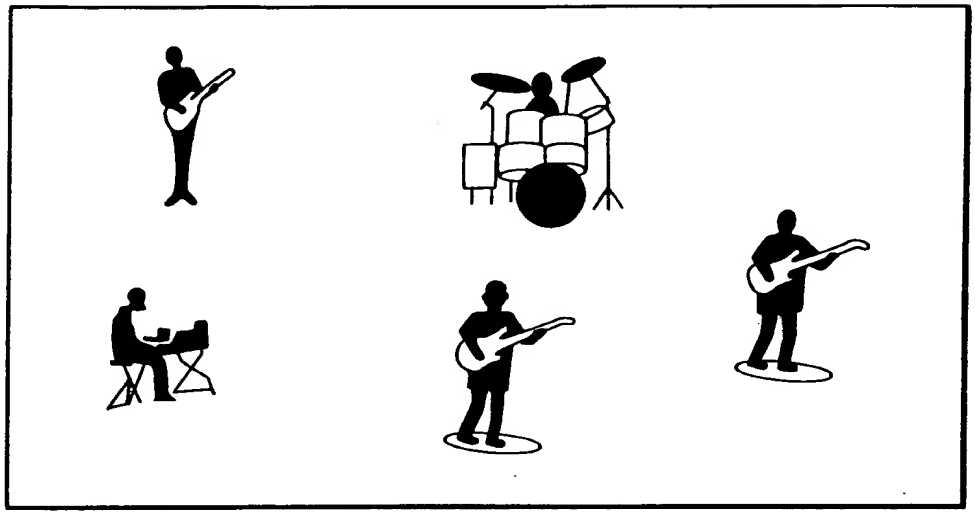


FIG.4B

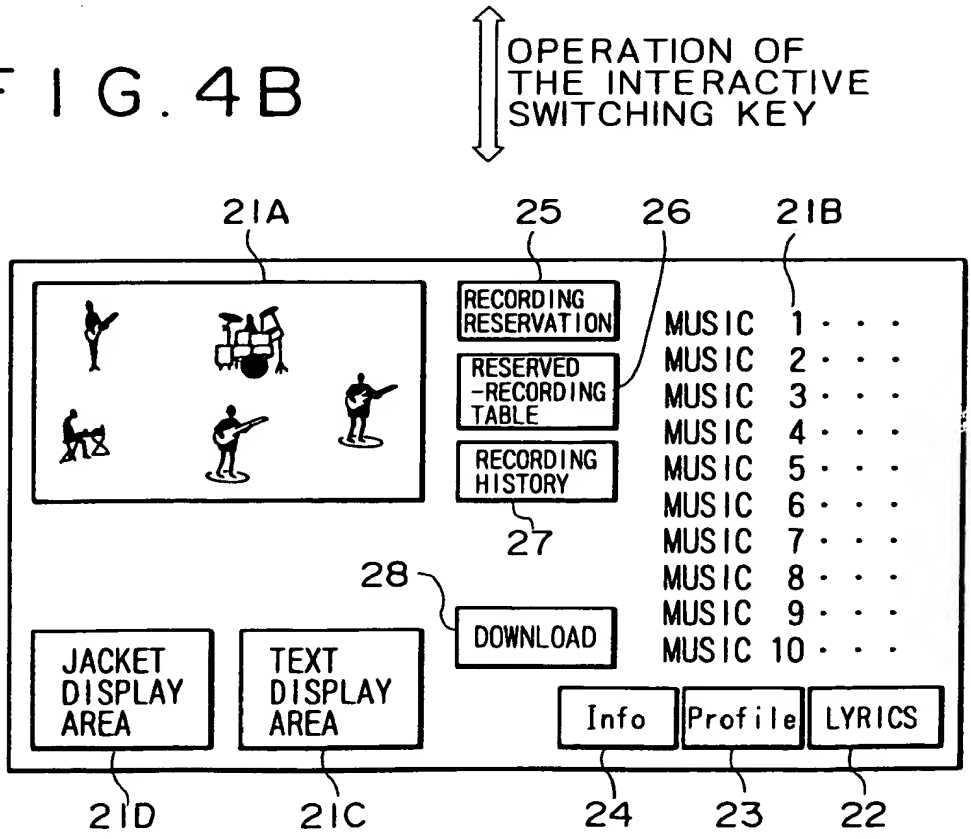

OPERATION OF THE INTERACTIVE SWITCHING KEY
21A
25
26
21B
RECORDING RESERVATION
RESERVED -RECORDING TABLE
RECORDING HISTORY
27
28
DOWNLOAD
MUSIC 1 · · ·
MUSIC 2 · · ·
MUSIC 3 · · ·
MUSIC 4 · · ·
MUSIC 5 · · ·
MUSIC 6 · · ·
MUSIC 7 · · ·
MUSIC 8 · · ·
MUSIC 9 · · ·
MUSIC 10 · · ·
JACKET DISPLAY AREA
TEXT DISPLAY AREA
Info
Profile
LYRICS
21D
21C
24
23
22

FIG.5

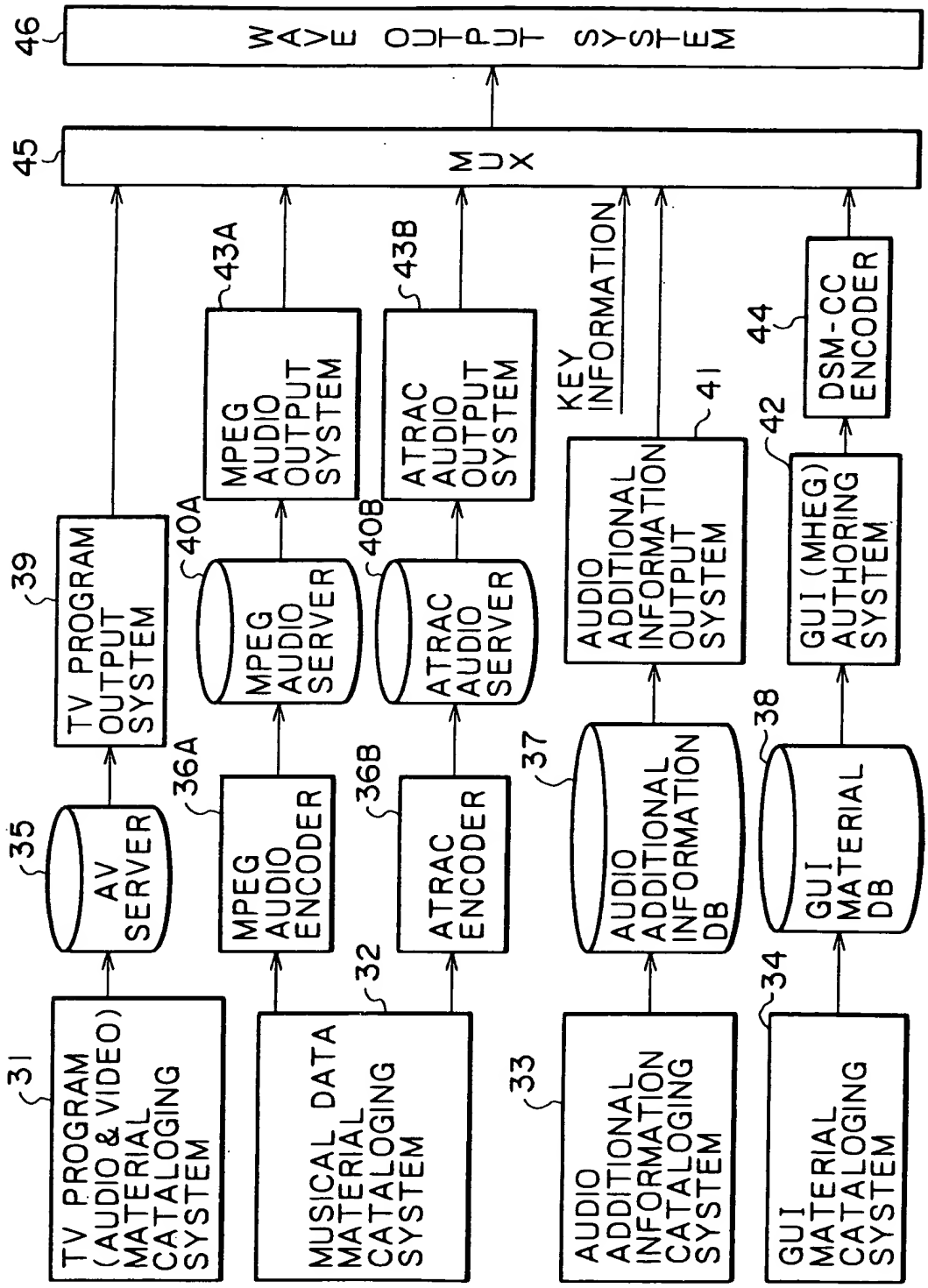
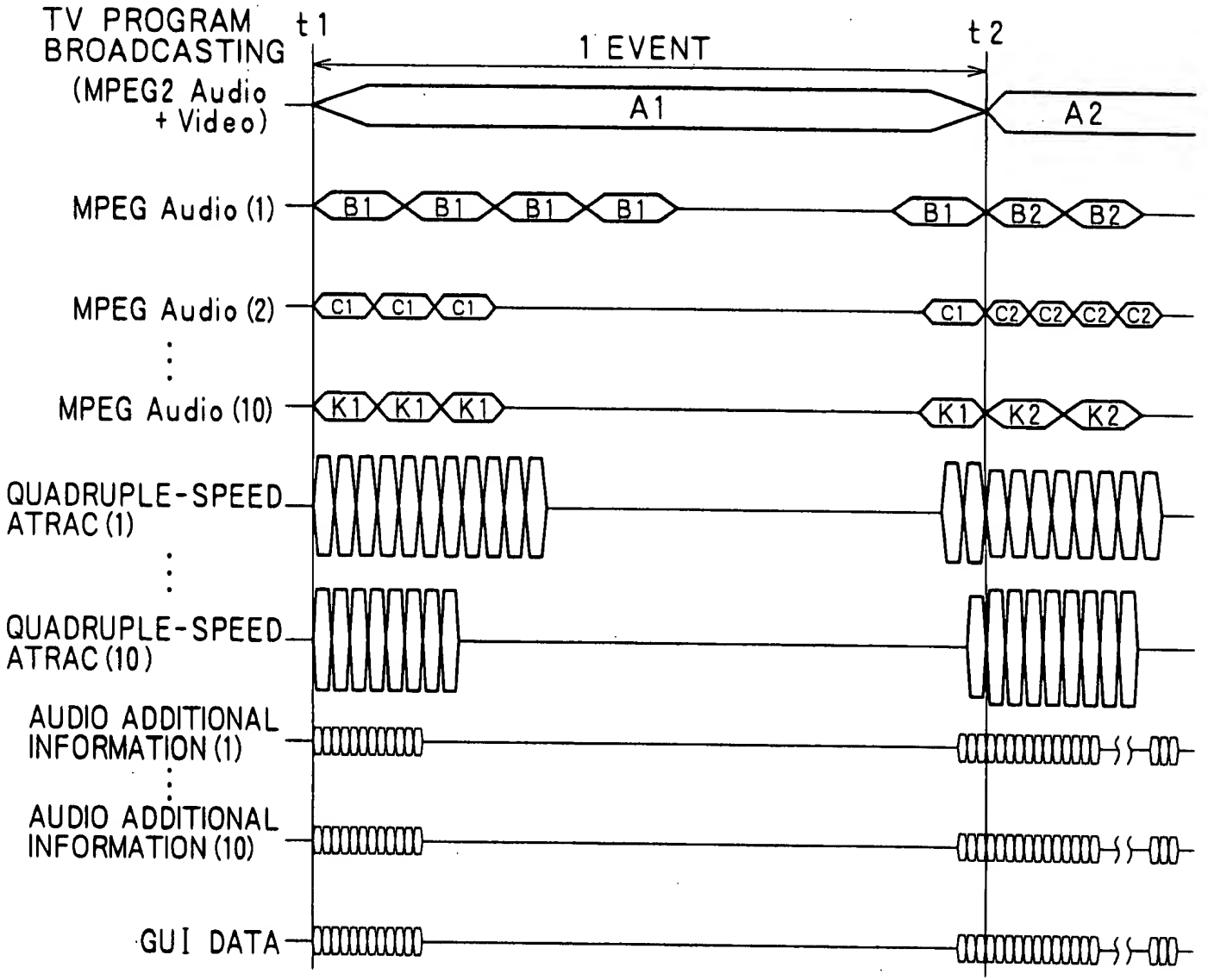

46
WAVE OUTPUT SYSTEM
45
MUX
KEY INFORMATION
43A
MPEG AUDIO OUTPUT SYSTEM
43B
ATRAC AUDIO OUTPUT SYSTEM
44
DSM-CC ENCODER
42
GUI (MHEG) AUTHORING SYSTEM
41
AUDIO ADDITIONAL INFORMATION OUTPUT SYSTEM
39
TV PROGRAM OUTPUT SYSTEM
40A
MPEG AUDIO SERVER
40B
ATRAC AUDIO SERVER
38
GUI MATERIAL DB
37
AUDIO ADDITIONAL INFORMATION DB
35
AV SERVER
36A
MPEG AUDIO ENCODER
36B
ATRAC ENCODER
32
MUSICAL DATA MATERIAL CATALOGING SYSTEM
34
GUI MATERIAL CATALOGING SYSTEM
33
AUDIO ADDITIONAL INFORMATION CATALOGING SYSTEM
31
TV PROGRAM (AUDIO & VIDEO) MATERIAL CATALOGING SYSTEM

FIG.6


TV PROGRAM BROADCASTING
(MPEG2 Audio + Video)
t1
t2
1 EVENT
A1
A2
MPEG Audio (1)
B1
B2
MPEG Audio (2)
C1
C2
MPEG Audio (10)
K1
K2
QUADRUPLE-SPEED ATRAC (1)
QUADRUPLE-SPEED ATRAC (10)
AUDIO ADDITIONAL INFORMATION (1)
AUDIO ADDITIONAL INFORMATION (10)
GUI DATA

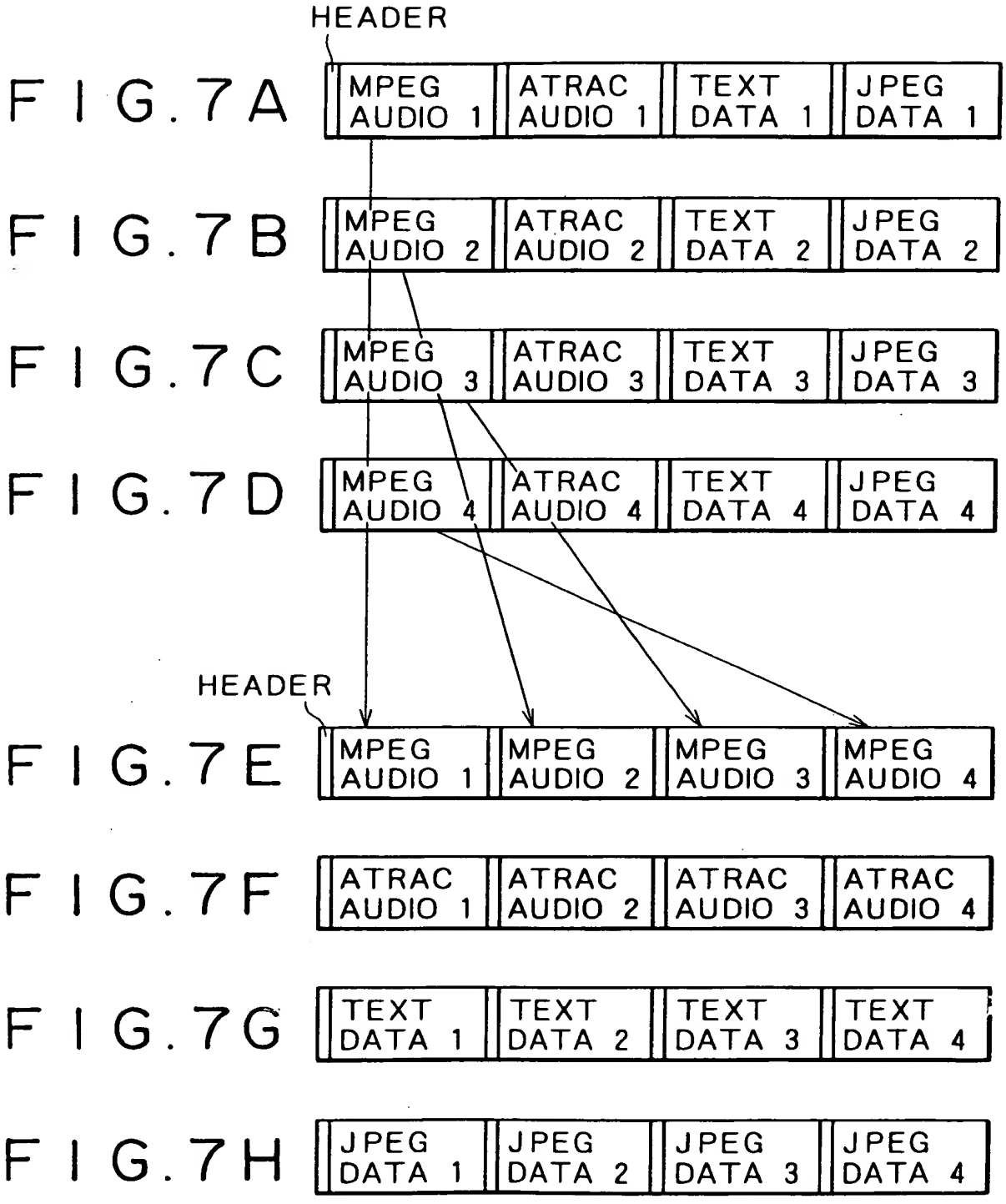


FIG.7A

FIG.7B

FIG.7C

FIG.7D

FIG.7E

FIG.7F

FIG.7G

FIG.7H

TIME-DIVISION MULTIPLEXING ON THE TRANSMITTER SIDE

FIG.8A

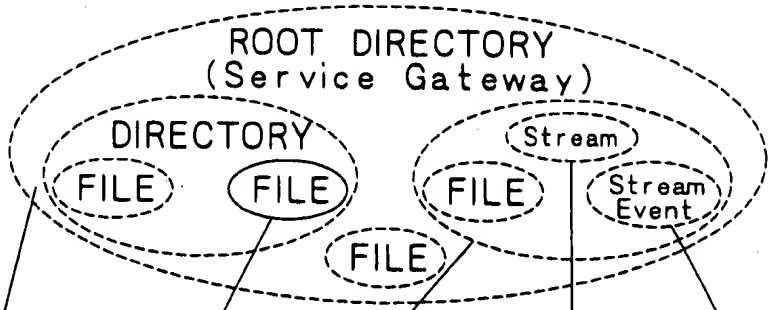


FIG.8B

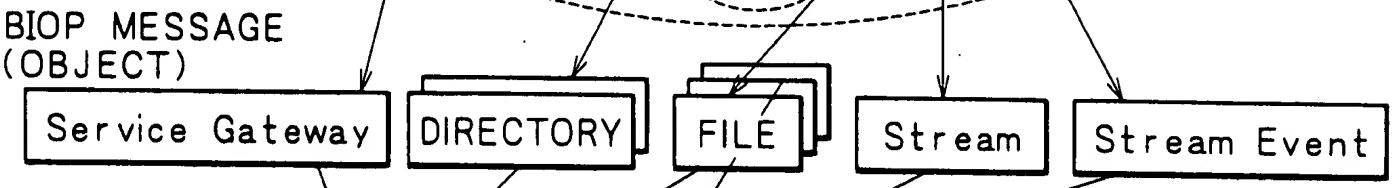


FIG.8C

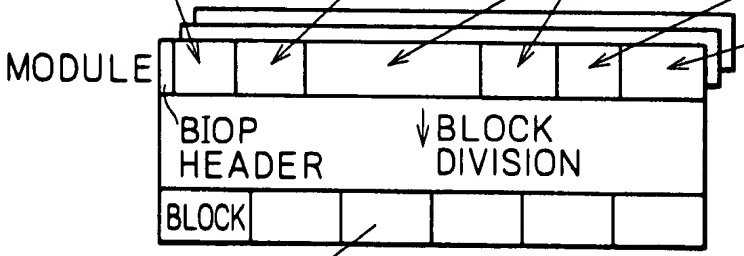


FIG.8D

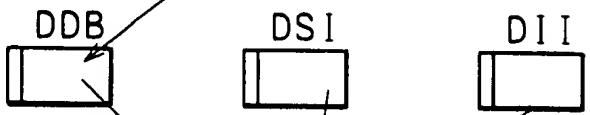


FIG.8E

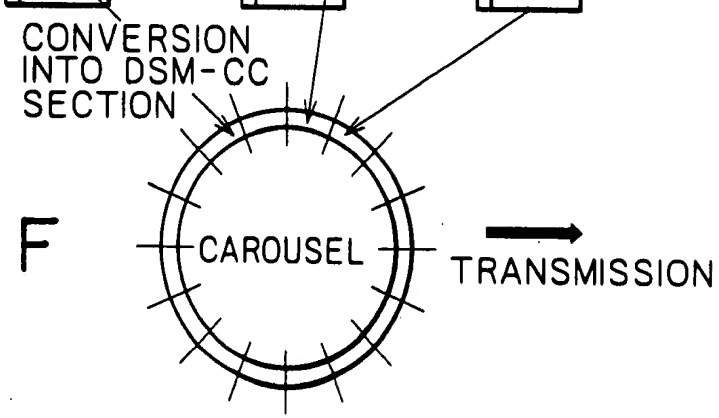


FIG.8F

FIG.9

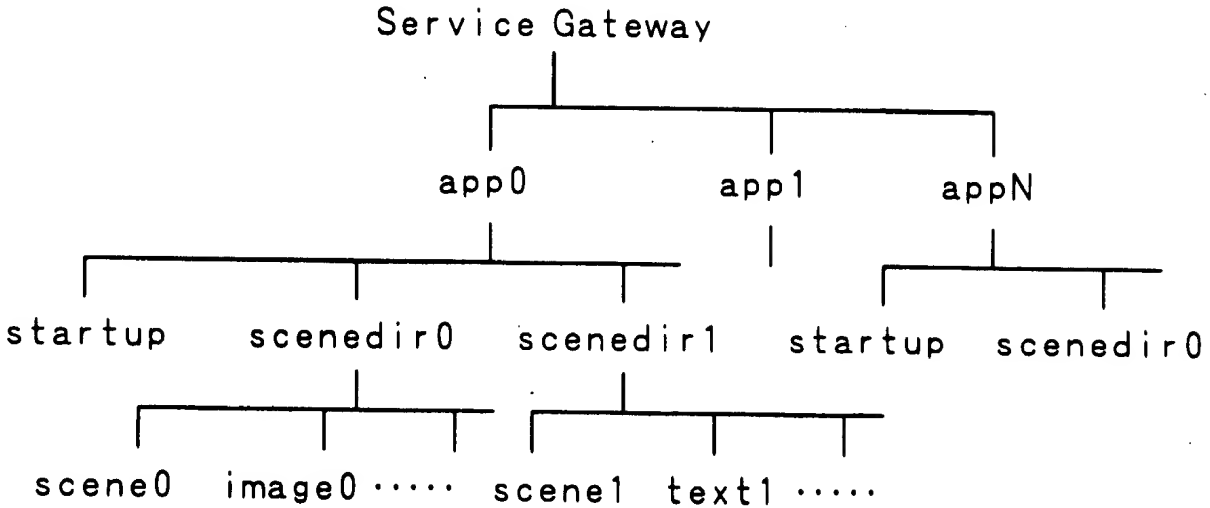

Service Gateway
app0
app1
appN
startup
scenedir0
scenedir1
startup
scenedir0
scene0
image0 .....
scene1
text1 .....

FIG.10A

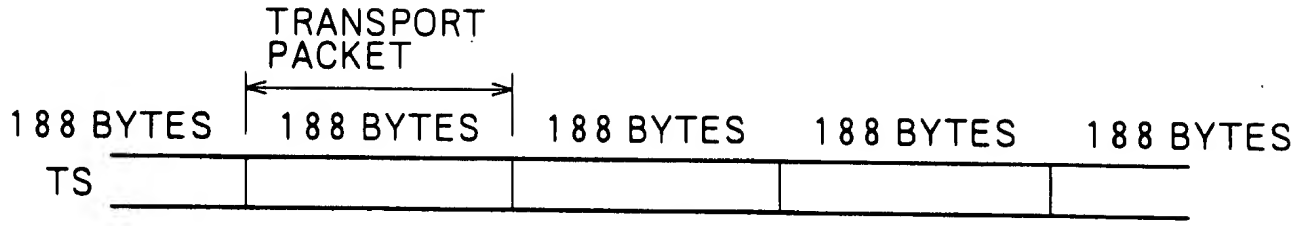


FIG.10B

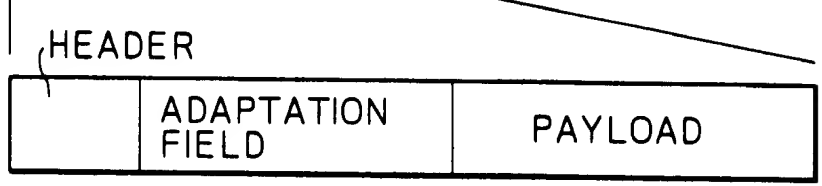
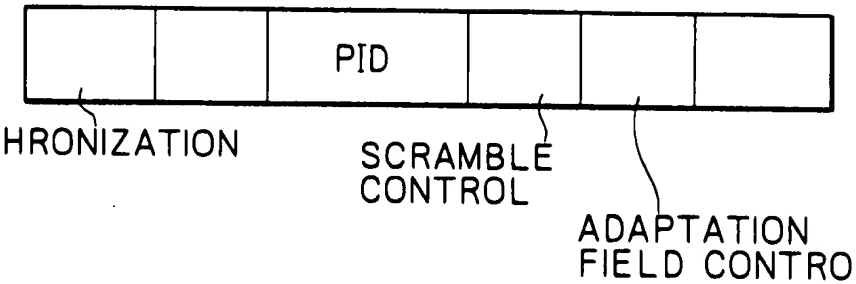


FIG.10C



TRANSPORT PACKET

0067E0 '2E1E2560

FIG.11A

FIG.11B

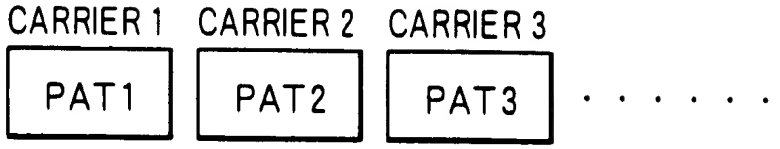


FIG.11C

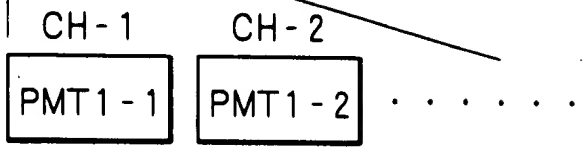


FIG.11D

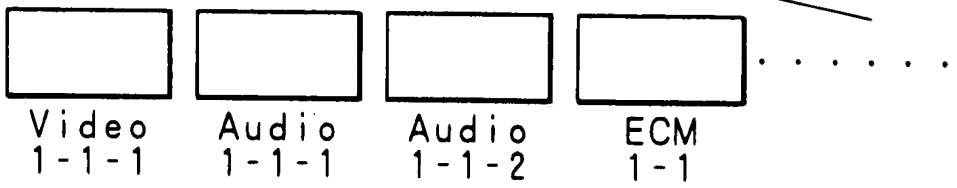


FIG. 12

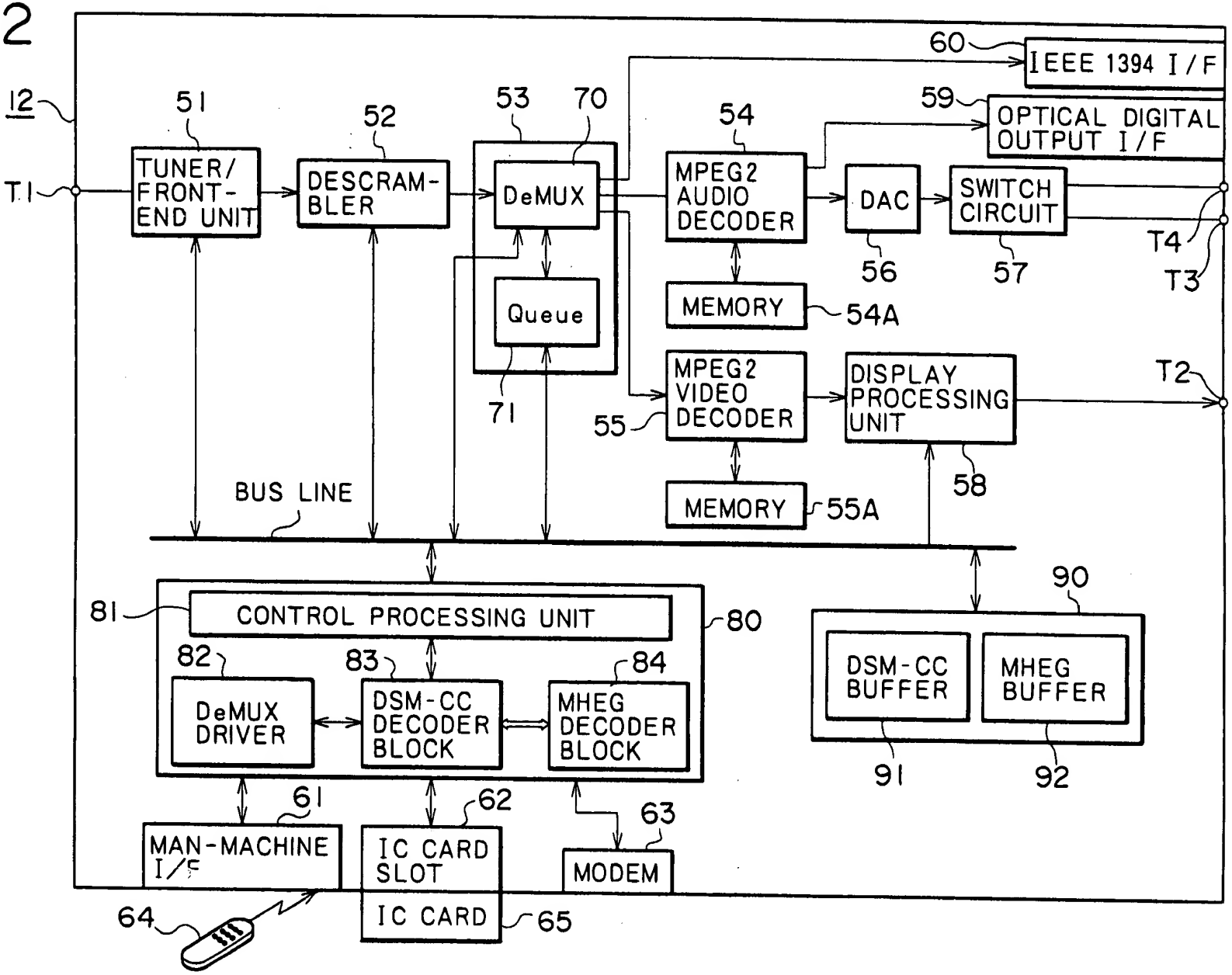

12
T1
51
TUNER/ FRONT-END UNIT
52
DESCRAM-BLER
53
70
DeMUX
Queue
71
60
IEEE 1394 I/F
59
OPTICAL DIGITAL OUTPUT I/F
54
MPEG2 AUDIO DECODER
MEMORY
54A
DAC
56
SWITCH CIRCUIT
57
T4
T3
MPEG2 VIDEO DECODER
55
MEMORY
55A
DISPLAY PROCESSING UNIT
58
T2
BUS LINE
81
CONTROL PROCESSING UNIT
80
82
DeMUX DRIVER
83
DSM-CC DECODER BLOCK
84
MHEG DECODER BLOCK
90
DSM-CC BUFFER
MHEG BUFFER
91
92
61
MAN-MACHINE I/F
62
IC CARD SLOT
IC CARD
65
63
MODEM
64

FIG.13

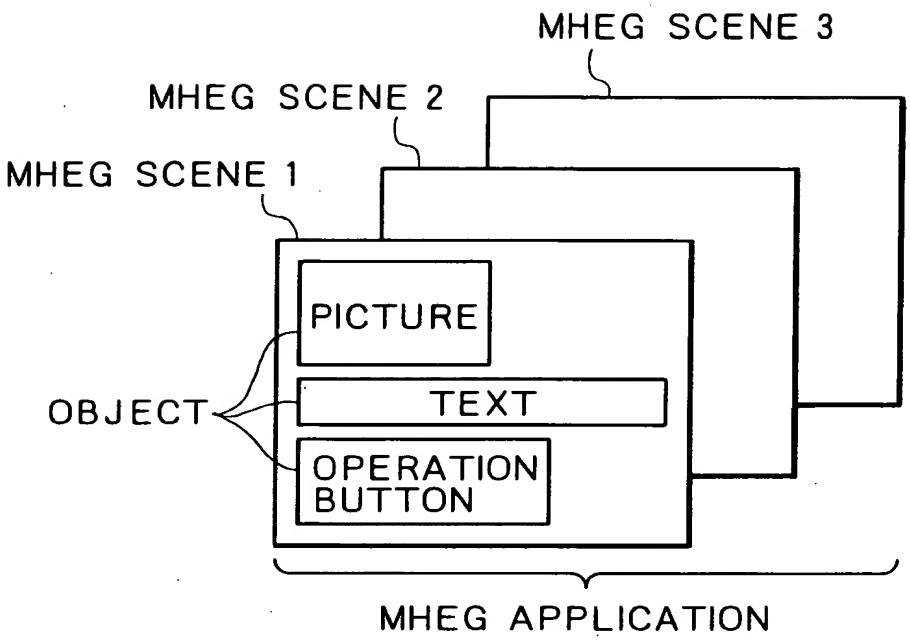
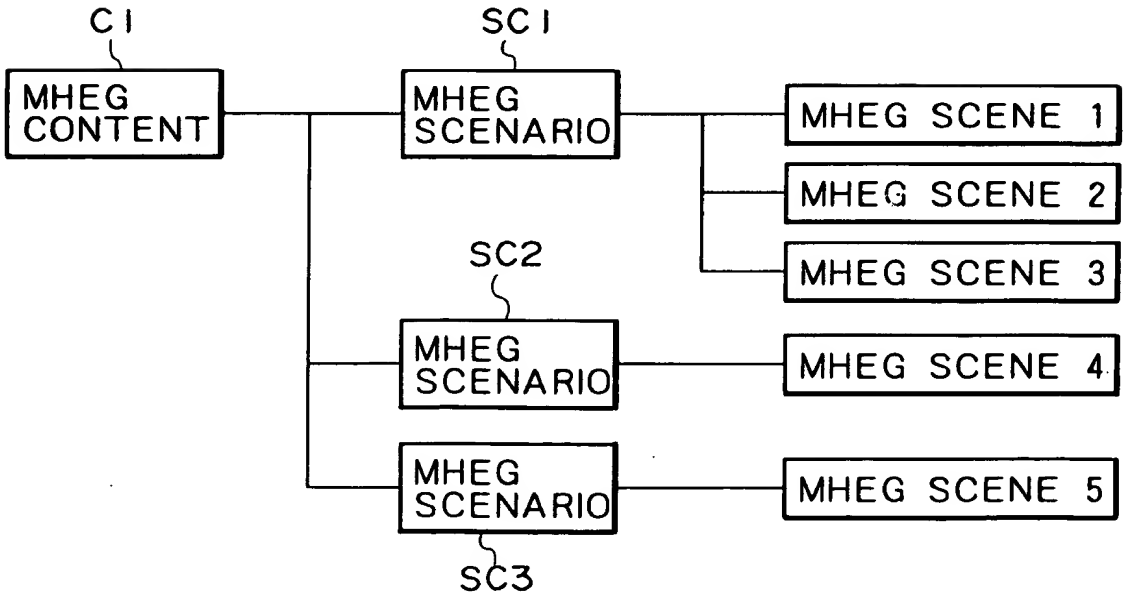

MHEG SCENE 3
MHEG SCENE 2
MHEG SCENE 1
PICTURE
TEXT
OPERATION BUTTON
OBJECT
MHEG APPLICATION

FIG.14


C1
MHEG CONTENT
SC1
MHEG SCENARIO
MHEG SCENE 1
MHEG SCENE 2
MHEG SCENE 3
SC2
MHEG SCENARIO
MHEG SCENE 4
MHEG SCENARIO
MHEG SCENE 5
SC3

0007E0 '22:23560

FIG.15

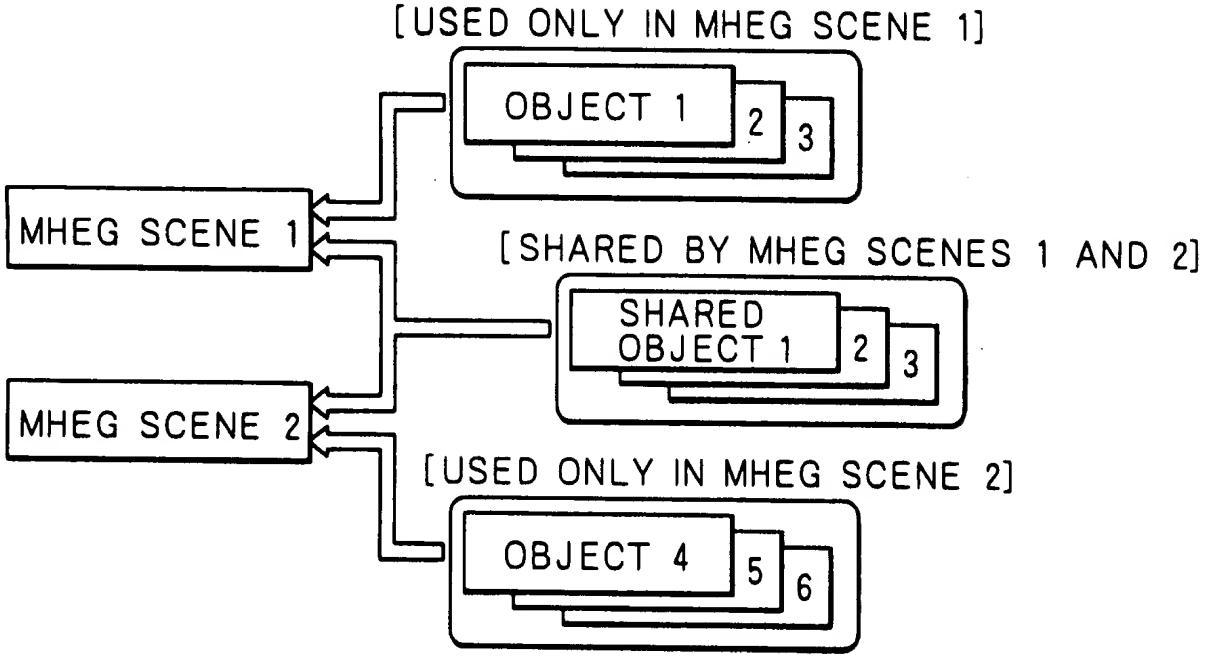


FIG. 16A FIG. 16B

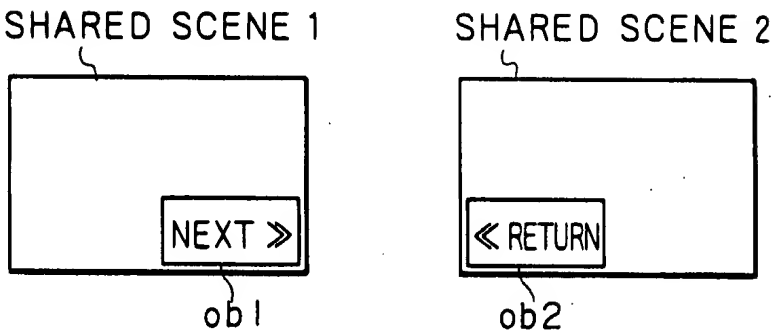


FIG. 16C FIG. 16D FIG. 16E FIG. 16F

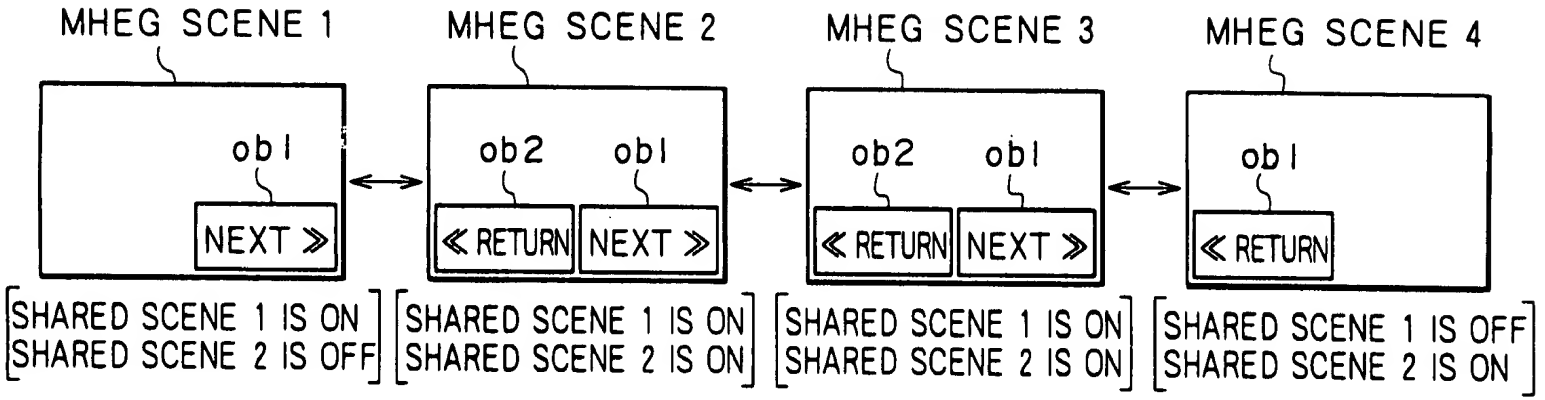


FIG.17A FIG.17B

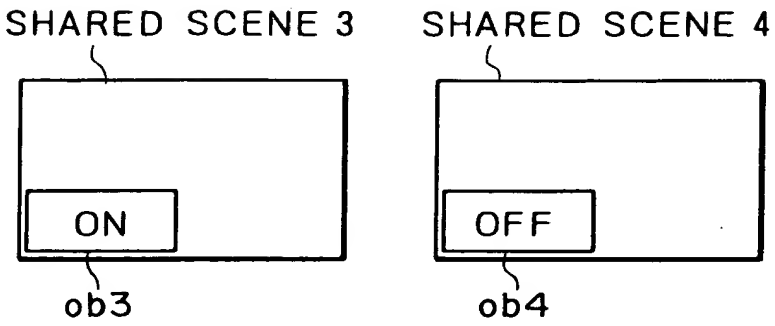


FIG.17C FIG.17D

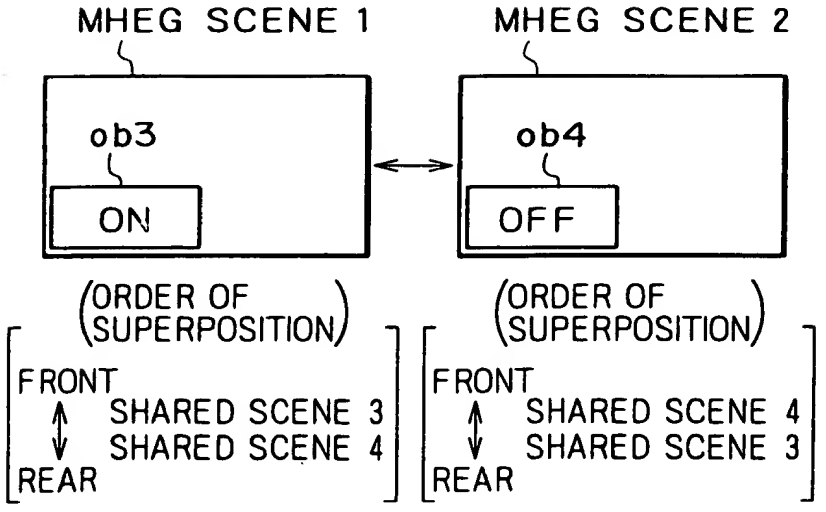


FIG. 18A

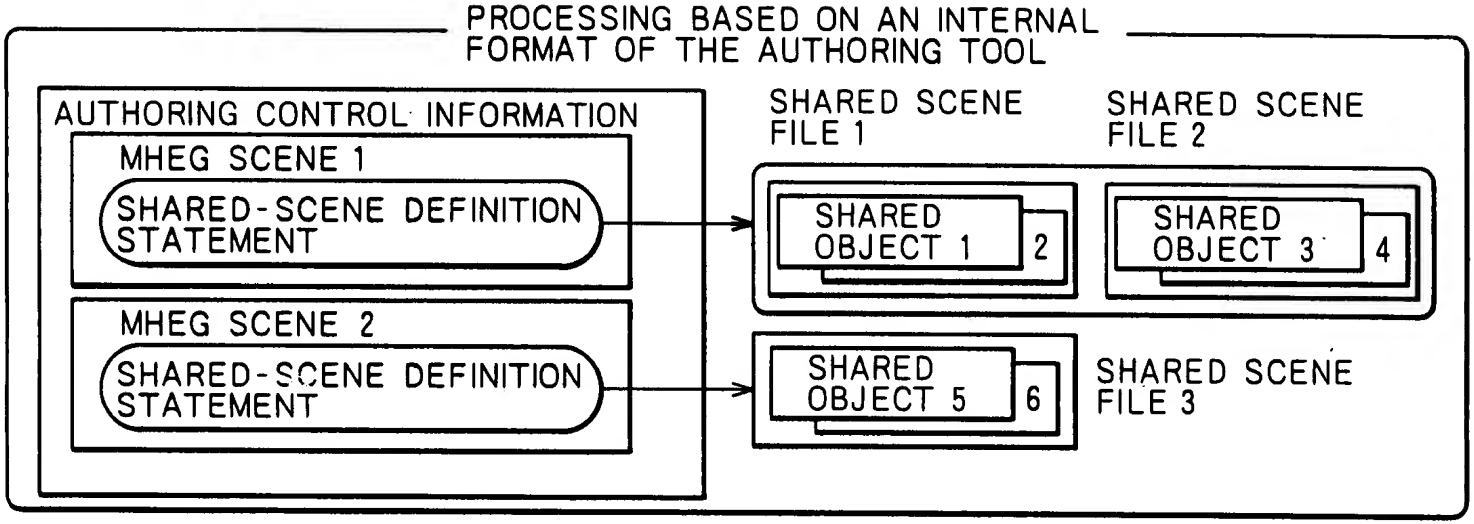


FIG. 18B

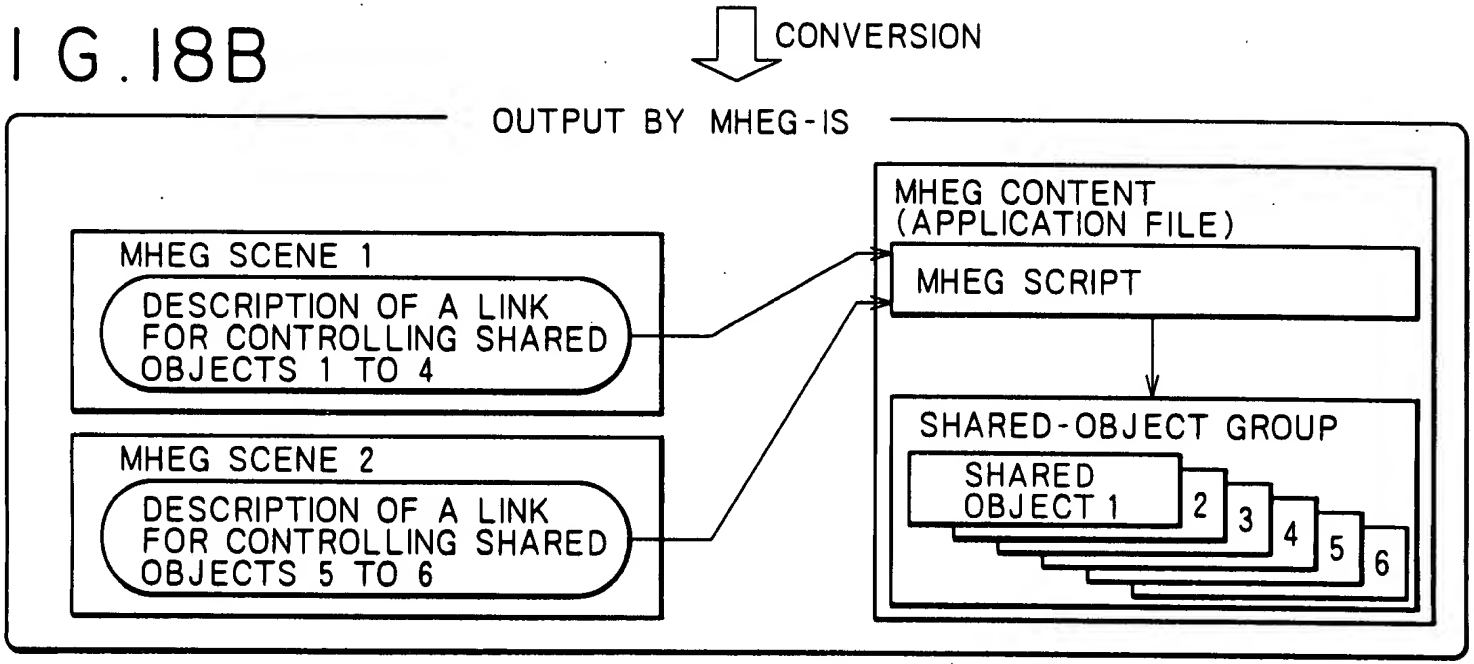


FIG.19

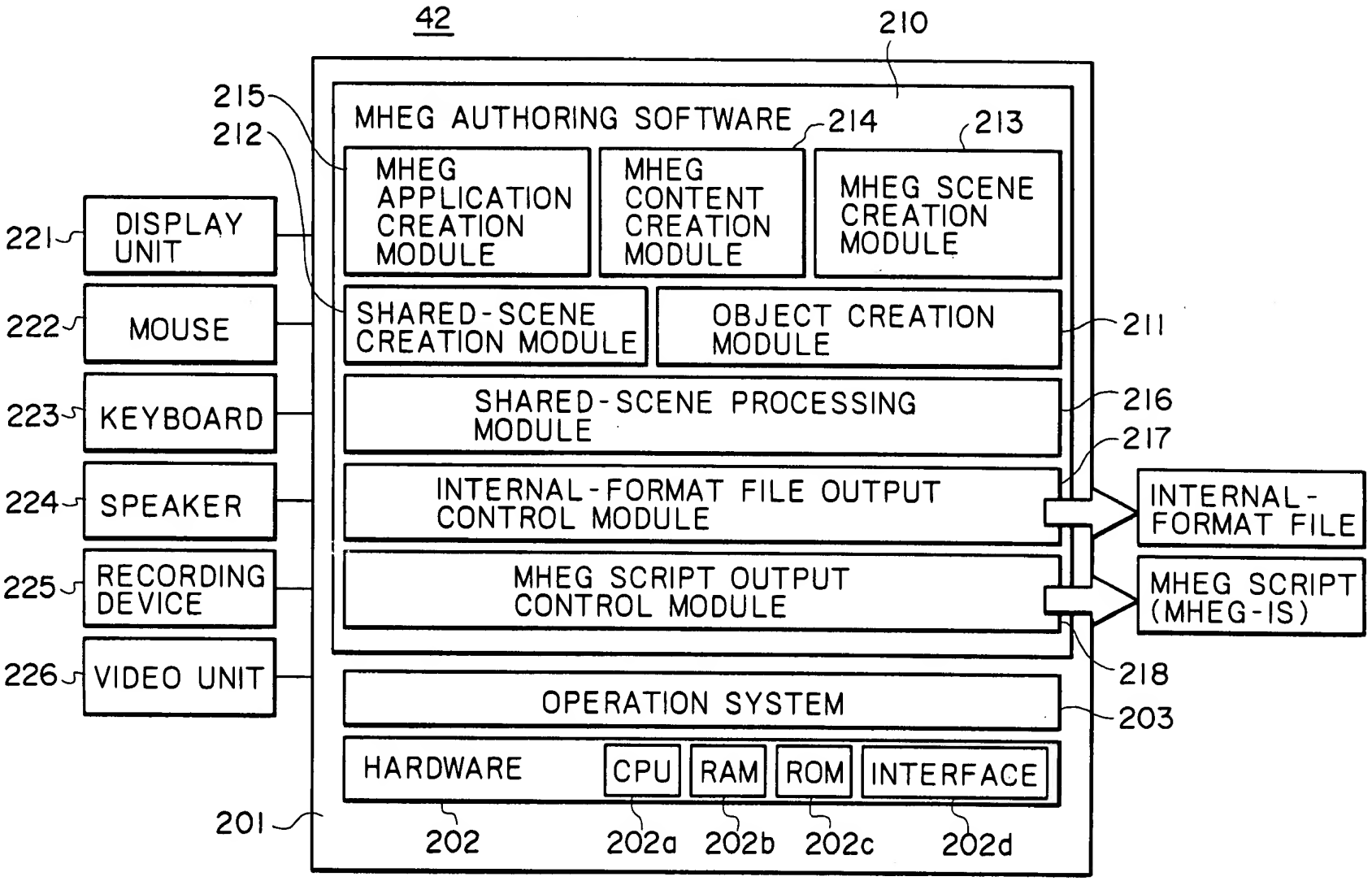

42
210
215
212
MHEG AUTHORING SOFTWARE
214
213
MHEG APPLICATION CREATION MODULE
MHEG CONTENT CREATION MODULE
MHEG SCENE CREATION MODULE
SHARED-SCENE CREATION MODULE
OBJECT CREATION MODULE
211
SHARED-SCENE PROCESSING MODULE
216
217
INTERNAL-FORMAT FILE OUTPUT CONTROL MODULE
INTERNAL-FORMAT FILE
MHEG SCRIPT OUTPUT CONTROL MODULE
MHEG SCRIPT (MHEG-IS)
218
OPERATION SYSTEM
203
HARDWARE
CPU
RAM
ROM
INTERFACE
201
202
202a
202b
202c
202d
221
DISPLAY UNIT
222
MOUSE
223
KEYBOARD
224
SPEAKER
225
RECORDING DEVICE
226
VIDEO UNIT

FIG. 20A

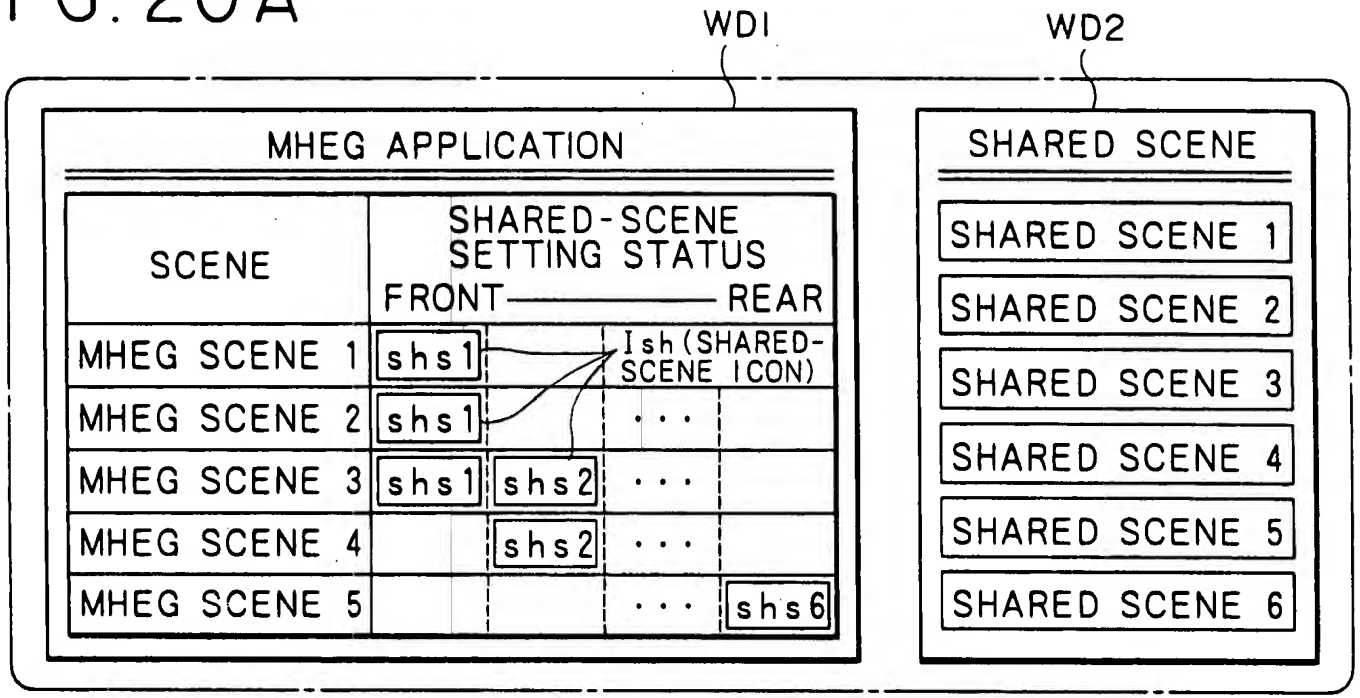
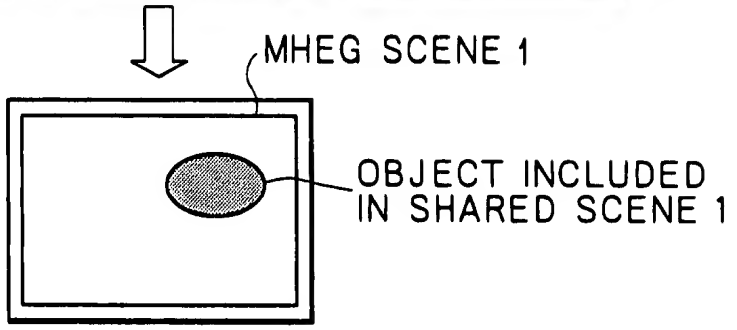
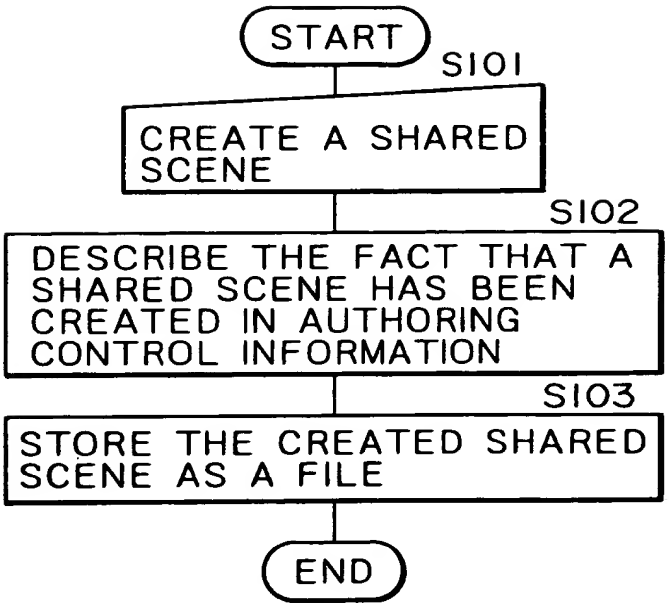


FIG. 20B



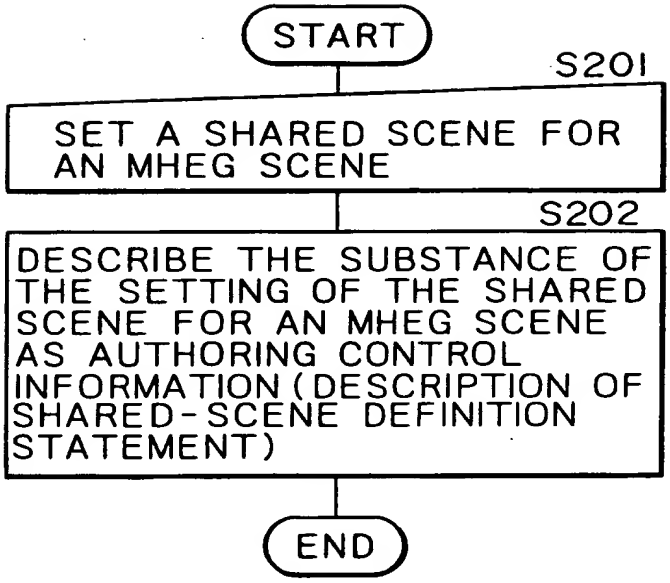
SCENE EDITING SCREEN

FIG. 21



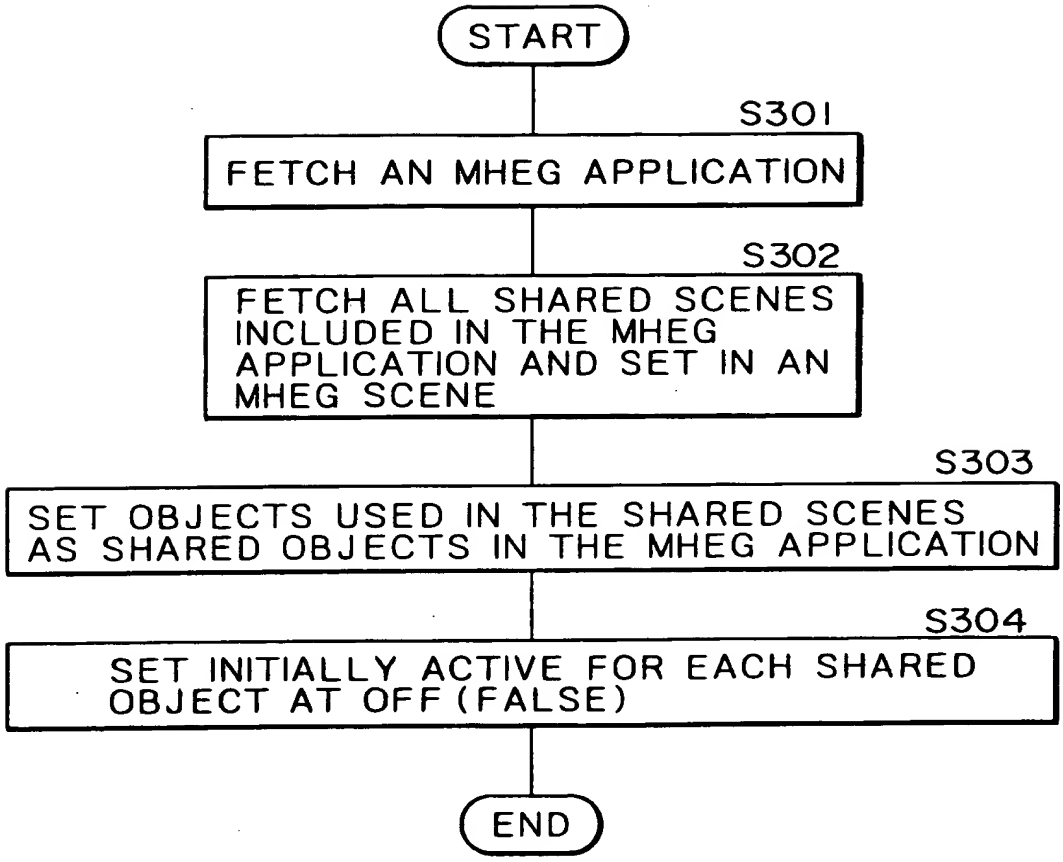
CREATION OF A SHARED SCENE

FIG. 22



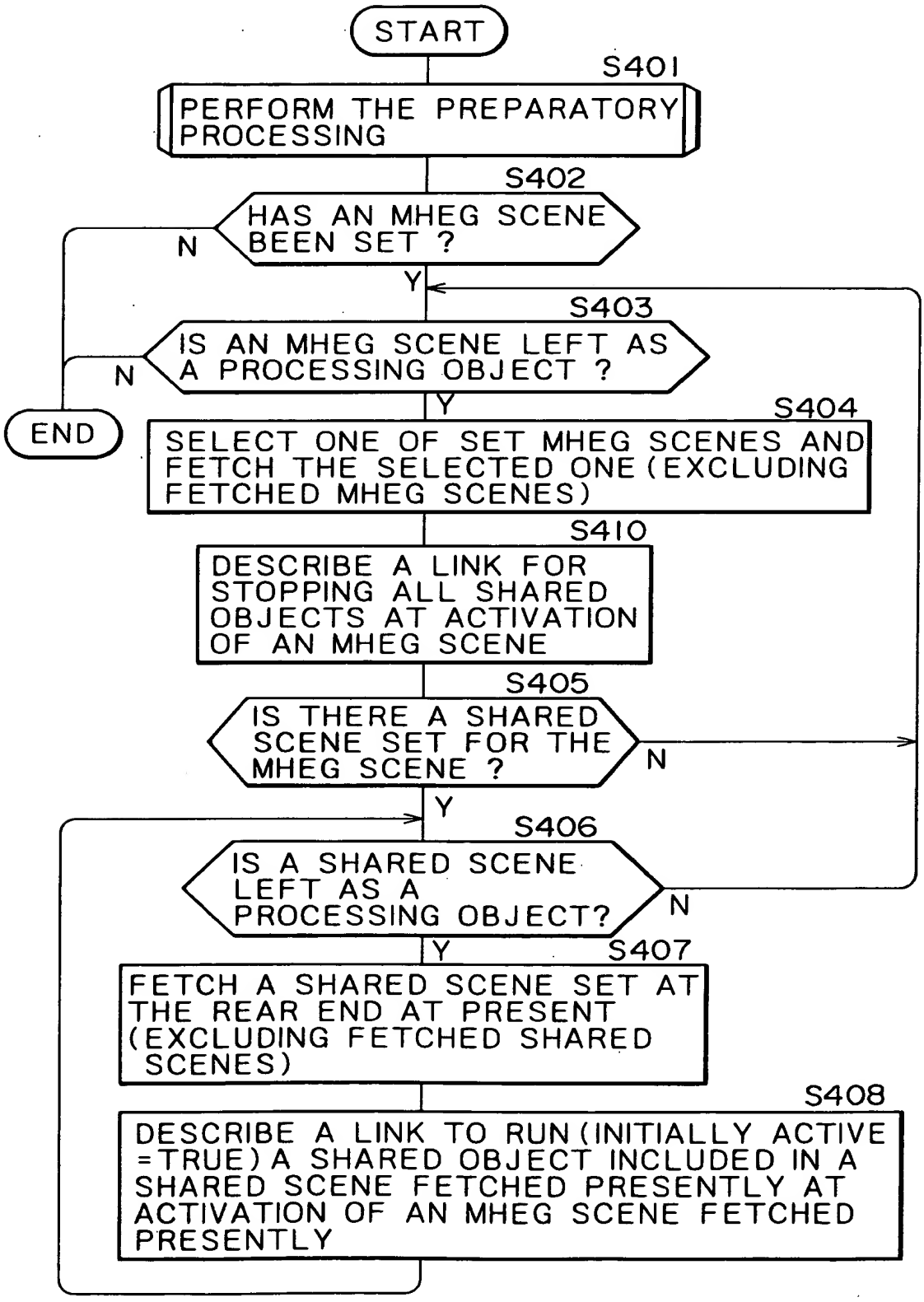
SETTING A SHARED SCENE FOR AN MHEG SCENE

FIG. 23



PREPARATORY PROCESSING FOR OUTPUTTING A SHARED SCENE TO AN MHEG SCRIPT

FIG.24


START
S401
PERFORM THE PREPARATORY PROCESSING
S402
HAS AN MHEG SCENE BEEN SET ?
N
Y
S403
IS AN MHEG SCENE LEFT AS A PROCESSING OBJECT ?
N
Y
END
S404
SELECT ONE OF SET MHEG SCENES AND FETCH THE SELECTED ONE (EXCLUDING FETCHED MHEG SCENES)
S410
DESCRIBE A LINK FOR STOPPING ALL SHARED OBJECTS AT ACTIVATION OF AN MHEG SCENE
S405
IS THERE A SHARED SCENE SET FOR THE MHEG SCENE ?
N
Y
S406
IS A SHARED SCENE LEFT AS A PROCESSING OBJECT?
N
Y
S407
FETCH A SHARED SCENE SET AT THE REAR END AT PRESENT (EXCLUDING FETCHED SHARED SCENES)
S408
DESCRIBE A LINK TO RUN (INITIALLY ACTIVE =TRUE) A SHARED OBJECT INCLUDED IN A SHARED SCENE FETCHED PRESENTLY AT ACTIVATION OF AN MHEG SCENE FETCHED PRESENTLY